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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,651	12/29/2000	Robert C. Glenn	42390P9716	1502

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EXAMINER

LAMARRE, GUY J

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 01/20/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/752,651

Applicant(s)

GLENN ET AL.

Examiner

Guy J. Lamarre, P.E.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. Applicant's declaration of 30 Mar. 2001 has been entered.
- 1.1 Pursuant to 35 USC 131, Claims 1-24 are presented for examination.

Reassignment Affecting Application Location

2. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2133.

Drawings

3. The Drawings are objected to because Figure 1 referred to as conventional in the specification on page 1 para. 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC ' 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

- 4.1 **Claims 1-24** are rejected under 35 U.S.C. 102 (e) as being anticipated by **Widmer** (US Patent No. 6,496,540; Filed: July 22, 1998).

Widmer discloses skew adjustment algorithm in “Transformation of parallel interface into coded format with preservation of baud-rate” wherein “the step of adjusting transmission

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delay by a dynamically adjustable delay in each transmission link may be included. The step of retiming coded data blocks on each link with a dedicated adjustable clock, and the step of eliminating skew among the links by providing a second retiming of data transferred on the links at a rate less than the predetermined baud rate with a clock system shared by all links may be included. The steps of receiving transmitted coded data blocks from the transmission lines at a receiver end is preferably included. The step of checking disparity to determine errors in the data blocks at the receiver end may be included. The step of encoding may further include the steps of outputting data blocks from each encoder to a disparity register and inputting disparity data from each disparity register to the encoder associated the disparity register to create a running disparity check of the data blocks. Further steps may include such as deserializing the serially transmitted coded data blocks at a receiver end to provide parallel coded data blocks, decoding the data blocks at a deserialized rate, the deserialized rate being lower than the predetermined baud rate and multiplexing the decoded data blocks to provide parallel data blocks at the predetermined baud rate. Each uncoded data block may include 10 bits and the predetermined baud rate may be greater than or equal to about 2 Gbaud.”

As per Claims 1-24, Widmer depicts, e.g., in Fig. 6 and related description in col. 1 line 13 et seq., the claimed method, comprising: a) measuring a skew between a data signal and a clock signal at a receiving end of a serial link; and b) adjusting (col. 2 line 27) a phase relationship between said data signal (col. 2 line 30) and said clock signal (col. 2 line 29) to reduce said skew via variable delay means implementable in hardware or software, e.g., in CPU or other digital component: Refer, e.g., to Fig. 6: block 22 and col. 2 line 23 et seq.

Widmer teaches means wherein said adjusting of said phase relationship occurs at a transmitting end of said serial link in col. 9 line 46; further comprising receiving said measured skew at a skew adjustment unit and determining said phase relationship before said adjusting a

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phase relationship in col. 2 line 27 and col. 10 line 23; further comprising programming said phase relationship into a semiconductor chip or IC chip in col. 9 line 27 and col. 11 line 15.

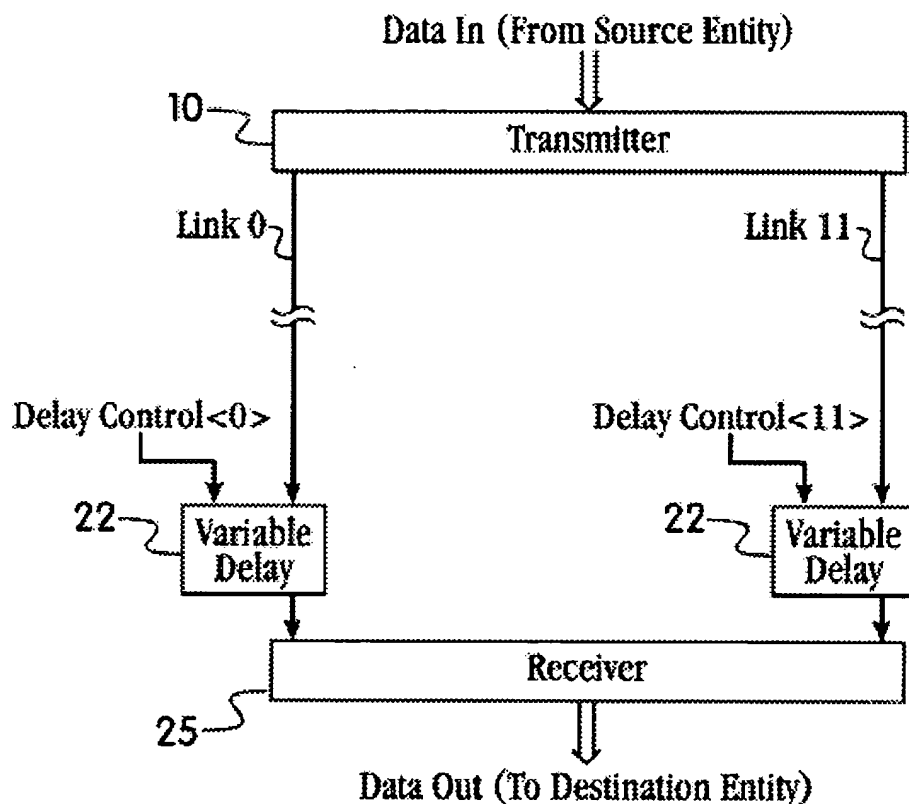


Fig. 6

Widmer further teaches means wherein said adjusting a phase relationship further comprises imposing a delay on at least one of said signals in col. 2 line 27, e.g., "Referring to FIG. 8, each of twelve deserializers 26 is controlled by clocks (CLK<0:11>) derived from the phase adjusted clock 20 for that particular link. After deserialization to a six-line/link width, data remains stable for intervals of close to 3 ns. Thus, if the skew between any two links remains well within these limits, there is enough margin to reclock all 72 lines of the twelve links at this

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point with a set of clocks $CLKS<0:5>$ to eliminate the skew. The clocks $CLKS<0:5>$ are 1/6th-rate clocks staggered by 0.5 ns but otherwise of uniform phase and all originating from a shared source clock, e.g. $CLKS<0>$ which is aligned with the serial bit-stream of link#0. This common set of clocks controls all functions thereafter to the point where the data is placed into a storage cell of a buffer 30 through decoders 28 and a multiplexer 29. All functions at the output side of buffer 30 are usually controlled by a clock provided by a destination entity, as indicated in FIG. 8."

Widmer further teaches means to impose delay on one or both signals as seen in Fig. 6. And wherein said adjusting a phase relationship further comprises adjusting a phase offset between a pair of phasors associated with a pair of phase interpolators, a first of said phasors used to derive a second clock signal that times the transmission of said data signal, a second of said phasors used to derive said clock signal in col. 2 line 27 wherein equivalent means are provided for eliminating skews via multiple values of a period to effectively result in phase interpolation means. Also refer to Fig. 6 wherein variable delay blocks 22 are configured to delay signals on the links by more than 360 degrees.

Widmer further teaches that such skew adjustment approach may be used in data communications such as network interface corresponding to a physical layer or wherein said network interface corresponds to a media access control layer, or other transmission system where signals may require synchronization, e.g. col. 1 line 8.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5.1 Any response to this action should be mailed to:

Commissioner of Patents and Trademarks, Washington, D.C. 20231

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or faxed to: (703) 872-9306 for formal communications.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, **Fourth Floor** (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy J. Lamarre, P.E., whose telephone number is (703) 305-0755. The examiner can normally be reached on Monday to Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady, can be reached on (703) 305-9595.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.



Guy J. Lamarre, P.E.
Patent Examiner
1/10/04
